DOCUMENT RESUME

ED 322 877 IR 014 244

AUTHOR Chen, Milton; And Others
TITLE KQED ITV: Case Studies of Exemplary Instructional Television Use.
INSTITUTION Station KQED, San Francisco, Calif.
PUB DATE Jan 88
NOTE 32p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Case Studies; Communications Satellites; Computer Assisted Instruction; Computer Simulation; *Educational Television; Elementary Secondary Education; Futures (of Society); *Instructional Effectiveness; *Instructional Improvement; Problems; Teaching Methods; Word Processing

ABSTRACT

Instructional television (ITV) is an effective medium for improving teaching and learning at all levels of education. Thirteen brief case studies provide teacher's insights into how ITV can be integrated with newer computer and satellite technologies to provide instructional opportunities in numerous academic subjects for all students. The voices of the teachers describe how ITV has been used effectively in the past and offer advice for the future. ITV is viewed as an educational tool with pedagogical advantages intrinsic to the medium: (1) for visualizing the abstract concepts important to many subjects; (2) for conveying art, science, literature, and history as human experience; and (3) for providing role models that would otherwise remain distant in their students' lives. ITV facilitates learning for slower as well as more advanced students, and has the ability to maintain students' interest in learning more. (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

IR

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

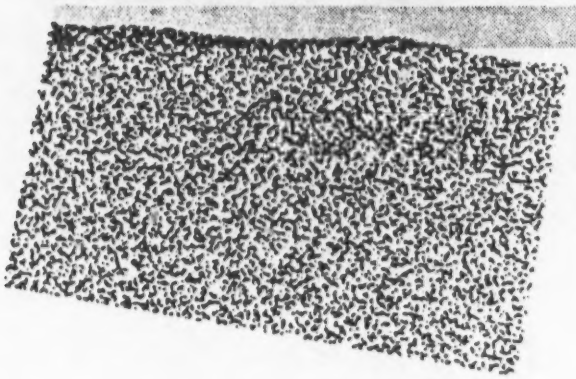
☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED322877

KQED ITV
Case Studies of Exemplary Instructional Television Use



January 1988

Case Study Writers

Milton Chen
Steven Klein
Martha Mills
Janet Nielsen
Elizabeth Reeves
Lorraine Taylor

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Milton Chen

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IR 014 244

KQED 9
San Francisco

KVIE 6
Sacramento

KMTF 18
Fresno

BEST COPY AVAILABLE

TABLE OF CONTENTS

Page

FOREWORD 1

ELEMENTARY SCHOOLS

Trinity Center Elementary School, Trinity County 3
Pleasant Valley Elementary School, Penn Valley, Nevada County 5
White Rock Elementary School, Rancho Cordova, Sacramento County ... 7
Ethel Phillips Elementary School, Sacramento 9
Burroughs Elementary School, Fresno 11
Woodrow Wilson Elementary School, Daly City, San Mateo County 13
Olinda Elementary School, Richmond, Contra Costa County 15

MIDDLE SCHOOLS

Pine Valley Intermediate School, San Ramon, Contra Costa County ... 18
Bidwell Junior High School, Chico, Butte County 19
Ben Franklin Middle School, San Francisco 21
Branciforte Junior High School, Santa Cruz..... 23

HIGH SCHOOLS

Hogan Senior High School, Vallejo, Solano County 25
Woodrow Wilson High School, San Francisco 27

BEST COPY AVAILABLE

FOREWORD

Dr. Milton Chen
Director of Instructional Television
KQED, San Francisco

These brief case studies were commissioned by the California State Department of Education as part of an ongoing effort to evaluate educational technology programs funded through Assembly Bill 803. They serve a crucial purpose for us as well. The voices of these teachers describe how ITV has been used effectively in the past and offer advice for the future. We thank these teachers and administrators for providing this valuable feedback.

These case studies present teachers committed to improving the effectiveness of their teaching and their students' learning. For them, instructional television is not merely motivational, but central to that mission. They view ITV as an educational tool with pedagogical advantages intrinsic to the medium: for visualizing the abstract concepts important to many subjects; for conveying art, science, literature, and history as human experience; for providing role models that would otherwise remain distant to their students' lives.

In the 1980s, educational television finds itself in the ironic position of being an older technology that still carries the ring of novelty for many educators. Compared with the newer computer technologies, ITV has advantages of being relatively inexpensive for schools, easy to operate for teachers, and democratic in its pervasive availability. These case studies provide insight into how ITV can be integrated with the newer computer and satellite technologies. Together, they provide complementary tools for student learning. Several of these classrooms, such as Wendy Maynard's 4th/5th-grade in Daly City and Donald Sisk's 5th-grade in Richmond, use ITV as the sparkplug for educational chain-reactions that incorporate software applications such as word processing or computer-based simulations.

These stories also tell us how age-old problems still prevent ITV from fulfilling its potential. Access to equipment continues to plague usage. Program quality has improved and can improve further, not only in visual "production value" but also in pedagogical assumptions about appropriate subject matter, ways in which it can be conveyed, and the ways in which students learn. Several teachers stated the need for programming at the extremes of our K-12 grade levels, for our oldest students at the high school level and our youngest in the early primary grades. They also mentioned the need for shows that respond to educational priorities in this state, such as programming for our burgeoning immigrant student population or series that present California history and culture.

The VCR clearly is the technological breakthrough awaited by this field. In fact, the VCR is finding its way into American homes more quickly than our schools. A recent A. C. Nielsen report finds that 51% of American households now own a VCR. The report also holds encouraging news for those of us in northern California: our region leads the country, with

61% of households in the San Francisco and Sacramento areas having VCRs, more than 6 in 10 households. Yet teachers speak of their frustration in dealing with VCR-to-classroom ratios of 1 or 2 to 10.

Given the paucity of equipment in most schools, the most devoted teachers are setting the timers on their home VCRs to record ITV broadcasts during the school day. These include not only Wendy Maynard, but also Kathy Jones, a 2nd-grade teacher, Durl Van Alstyne, a junior high teacher, and high school teachers Carolyn Henderson and Nick Fesunoff.

Many teachers highlighted the importance of comprehensive and easy-to-use print materials. These include the Program Schedule, distributed in bulk to counties at the start of each school year, the Technology in the Curriculum (TIC) Guides listing high-quality video and software for subject areas, and teacher's guides for individual series. Many teachers also spoke of the value of in-service workshops and summer institutes in generating new ideas about ITV use and providing a network of educators with shared concerns.

These teachers believe ITV can promote both effective and efficient teaching. They spoke of ITV's effects on student learning in numerous subject areas, for slower learners as well as advanced students, and its ability to maintain students' interest in learning more. They characterized ITV as "bridging the gap and making the abstract tangible for students;" "visually showing children things we can't do in the classroom;" "lending an expertise and realism I can't duplicate."

Carolyn Henderson of Vallejo, along with Judy Mabin and Jesus Gonzalez of Sacramento, also referred to ITV as a "time-saver." Their lessons take less time to teach and ITV presentations conserve valuable teacher time that can be devoted to other, more personalized teaching. But these teachers also spoke of the extra time they spend obtaining programs and print materials, previewing programs, and preparing lessons. Effective ITV use is not for those seeking an easy way out. These teachers are, as one case study described, "the go-getters."

There are other interesting nuggets here as well. Richard Wayne of Fresno incorporates teaching techniques he observes from ITV shows into his other teaching. Marty Karlin, principal of a one-room schoolhouse in Trinity County, believes ITV contributed to raising his students' CTBS math scores. Bill Marsh, a Berkeley researcher, is working with the Ben Franklin School in San Francisco to test the cognitive benefits of a style of ITV use he calls "actively viewed video."

We call these glimpses of ITV usage "exemplary," but we believe there are many more where these come from. The experience of interviewing these teachers will prompt us to search out others like them. And their comments inspire us to do better, to provide better programming and utilization services that meet their felt needs. KQED was originally founded in the 1950s to provide educational services to schools. Our ITV staff is committed to serving that original mission and to making good on the early promise of instructional television. We consider this report Volume One of many volumes to come.

ELEMENTARY SCHOOLS

"And most interesting, students [who viewed ITV] scored higher on the conceptual segments of the test than on the computational segments. Usually the reverse is true."

— Marty Karlin, principal
Trinity Center Elementary School
Trinity Center, Trinity County

Marty Karlin and his wife, Terry, work together as principal and teacher at Trinity Center Elementary School in Trinity County. They comprise the entire school and district staff for 24 students in a town of 200 nestled deep in the Trinity Alps, 70 miles west of Redding, California.

This is one-room schoolhouse country. Trinity County is rural, pristine mountain country. Food shopping is 30 miles away, there are no major highways, and the town library is open just one day a week. But at Trinity Center Elementary School, rural does not mean isolated. A 12-foot satellite earth station sits outside the school, capable of accessing 150 channels. Inside the school sits a well-equipped computer lab with 15 computers, enough for a one-to-one student/computer ratio and for extensive use as a curriculum tool.

Marty Karlin began teaching here four years ago after teaching five years in New York City in a school with 30 classes on one grade level. There were 120 teachers at his school, more teachers than in all of Trinity County.

Terry and Marty got involved with technology three years ago when the school received an AB 803 grant matched by additional funds from the district and school site council. The original purpose of the satellite dish was to access the PBS National Instructional Satellite Service (NISS). Trinity County is part of the Northern Instructional Television Advisory Council (NITAC Region), and also contracts with KQED to receive rights to ITV programming via NISS.

Marty discovered ITV when he became the area's designated representative for the Technology in the Curriculum (TIC) Guides and again through the Math-Science Technology Summer Institute at the Lawrence Hall of Science. He has subsequently given numerous technology workshops throughout the region. During the summers he pursues his master's degree at the University of Oregon in computers in education.

"In the beginning, the satellite was a pain in the neck", according to Marty. "It didn't work for the first 6 months. It took months of fiddling with it and working with the NISS schedule to get it right. With our one-room operation, I didn't have the time to make it happen."

But those obstacles did not deter Marty from using the technology. Last year, for example, Marty based 70% of his math curriculum on Challenge

of the Unknown, a video series focusing on the real life application of mathematics. After using the series, his students' CTBS math scores were all in the 70th percentile.

Even with a wilderness area adjacent to the school, Marty has found natural science series such as Up Close and Natural, The Community of Living Things and Voyage of the Mimi to be valuable resources for his classroom. Marty used Voyage of the Mimi as the centerpiece of a three-month thematic unit on the environment that included studying ocean environments, analyzing food webs and food chains, integrating other readings, and building a database of the information for further analyses.

In choosing what programs to use in his classroom, Marty starts with the teacher's guides. He orders them in the beginning of the year for series he is considering using. He uses the guides to evaluate the curriculum match and also refers to the TIC guides. "I use them religiously," he says. "I have a set at school and a set at home." Next Marty checks to see if the county media center has the videotapes. Even with direct satellite access at his school, Marty finds the convenience of the media library a time-saver and would like to see widespread access to pre-recorded tapes.

Asked why he uses ITV so intensively, Marty observes that "ITV is highly motivating, contemporary, and curriculum-related." He sees ITV as speaking to special needs of rural teachers and students. "In urban schools with larger staffs you have a variety of expertise. In a one-room cooperation, you have the strengths and weaknesses of one teacher. With ITV I can bring a variety of expertise into my classroom".

"Art is a visual and experiential activity. Few computer programs exist. We look to video to teach such a visible curriculum area."

— Kathy Jones, 2nd-grade teacher
Pleasant Valley Elementary School
Penn Valley, Nevada County

Three teachers at Pleasant Valley Elementary School are playing a vital role in shaping the future of education in this rural district nestled in the hills seven miles west of Grass Valley in Nevada County. Kathy Jones, dubbed a "real go-getter" by her colleagues, is a 2nd-grade teacher who serves as a technology consultant for the district and surrounding communities. As coordinator of Project Create!, a Level II AB 803 grant concentrating on fine arts education, Kathy persuaded 1st-grade teacher Bonnie Calkins and 6th-grade teacher Carol Weil to join her for a month of training at the Elementary Summer Technology Institute (ESTI) held in San Bernadino last summer. The trio now enthusiastically promotes the use of both computers and instructional television.

Veteran ITV users, Kathy and Bonnie agree that the ESTI training and follow-up support has been most beneficial in training them to use instructional television and self-generated video more effectively. Previous training by KQED ITV staff had made them aware of the programming and services available on cable and through their county Instructional Media Center. The ESTI training provided small and large group teaching strategies, access to a computer bulletin board to share ideas, and the professional camaraderie needed to tackle their fears about using technology.

Bonnie immediately implemented what she had learned by rearranging her classroom to accommodate a small-group teaching approach. During one visit, students in one section of the room wore headphones and viewed the show on Food Power from the Slim Goodbody series Well, Well, Well, then quietly generated answers to questions written on a nearby board. Another group at a table close by organized pictures of foods into the basic food groups while Bonnie read to students at the front of the room.

Carol, now in her second year of teaching, had no knowledge of ITV until she attended ESTI. She uses many forms of media with her 6th-graders but prefers instructional television because of the up-to-date information and approach. She believes that any video worth seeing once is worth seeing twice. Her students view programs first for the full visual/audio experience. She then segments the programs, highlighting the sequence of ideas and prediction of future events. Carol currently plans to use Newscast from the Past, followed by a simulation game in which students place themselves in the roles of ancient conquerors.

Together these teachers are implementing Project Create!, a district-wide effort to increase student motivation and productivity through fine arts and giving students a larger audience for their own work. In an area with few art museums, the 600 students in this K-8 district have few opportunities to experience art first-hand.

Kathy has placed an order with the Video Copy Centers for all the state-licensed series recommended in the Technology In the Curriculum (TIC) guides. She plans to use Arts Express, Arts Alive, The Big A, and Draw Along as part of the curriculum project. She has plans to videotape student art using the school camcorder.

These three teachers are also spreading the word about the effectiveness of ITV, training teachers one-on-one and throughout the county. Kathy serves as the technical consultant for the new 4th- through 6th-grade campus currently under construction. She has voiced teachers' demands for a monitor and VCR in every classroom and the school administration has responded that these will become high priority items.

Kathy, Bonnie, and Carol agree that the biggest deterrent to using ITV is access to equipment and programs. Programs are often difficult to obtain through the two county circulating libraries and teachers dislike using valuable time transporting equipment. Kathy, who presently tapes ITV series with her home VCR, recommends that a central library of teacher's guides and videos be established at the district. There are plans for instructional assistants who will assist in the computer lab as well as acquire video programming.

Bonnie made this final comment in an exasperated tone: "It's amazing that all this effort is needed to bring about change!" Both Carol and Kathy agree, but they know that change is vital to improving their students' education.

"Other teachers comment on how much science my past students know. I attribute that to the use of ITV programs. Also, parents sometimes give positive feedback about their children's reaction to a show."

— Judith Mabin, 3rd-grade teacher
White Rock Elementary School
Rancho Cordova, Sacramento County

Judy Mabin's first exposure to instructional television occurred while she was teaching a sensitive subject in science to 1st-graders in the early 1970's. Rather than raly on her own words to describe the process of giving birth, Judy chose to use a program from All About You that showed close-ups of cats giving birth. That was all she needed to help her teaching. "It showed things I could never have done," she explains.

Today, Judy teaches 3rd-grade in Rancho Cordova, one of many suburban communities surrounding Sacramento. Located in the Sierra foothills, White Rock Elementary School is comprised of students from various ethnic groups. There are 30 students in Judy's class, roughly evenly divided among students of Caucasian, black, and Asian background.

The visual element of television is what attracts Judy to the medium. "Some of these children are more visual learners. The programs pique their interest. Subject matter is retained better in memory because of its visual component."

When selecting a series, Judy first looks through the KQED ITV Program Schedule for a series that supplies the necessary information. She regularly borrows ITV programs from the county media center or uses the broadcast signal in her classroom. Once she has selected a program, Judy consults the Technology in the Curriculum (TIC) guides for pre- and post-viewing activities. She also makes regular use of teacher's guides for each series, which the school purchases from the county.

When teaching science concepts about the human body, Judy relies on strong programs from different series to help achieve her teaching objectives. She first shows Inside Story with Slim Goodbody to introduce the heart and circulatory system. Then she selects a program from 3-2-1 Contact that illustrates how animals change their heart rate during changes in climate. Newton's Apple serves to reinforce information about blood and blood types.

Judy also finds language arts programs such as Sixteen Tales, Bookbird, and Read It useful to stimulate reading. The mathematics series It Figures provides material that relates measurement to uses in daily life.

With a diversity of student backgrounds in her class, Judy has found ITV and computers to be an extremely important resource for her classroom. "I don't find the behavior-problem student having such a problem once the program begins," she says. "Usually those students are so fidgety. The extra stimulus seems to calm them down."

Judy's use of ITV has increased as more programs have become available. Judy explains, "The subject takes less time to teach using ITV. The material is better learned. I'd like to show the programs more often. It's a time-saver."

"ITV has opened up a new world. Thinking is what gets you to get ahead. ITV makes you think."

— Jesus Gonzalez, 4th-grade teacher
Ethel Phillips Elementary School
Sacramento, Sacramento County

Ethel Phillips Elementary School has the largest Hispanic enrollment in the Sacramento City school district. Of its 600 students, more than half are Hispanic and about 80% are classified as ESL students. Located in south Sacramento, this urban school attempts to deal with the problems that plague low-income, largely non-English-speaking students by providing enriched learning experiences.

Jesus Gonzalez, a 4th-grade teacher, is finding that instructional television gives his students the extra help they need to get ahead. This is his first year using ITV, and he is discovering positive results.

Last year, Jesus's students graduated from the 4th-grade, leaving behind a gift for upcoming classes. The students purchased a VCR and TV monitor with funds from a PTA-sponsored jewelry and candy sale. Jesus is using the equipment to tape KQED ITV programs and play tapes which he borrows from the district. (Sacramento City school district does not have a county media services contract.)

Jesus feels that ITV's visual elements offer experiences to his students that he cannot provide. "ITV provides an extra dimension," he explains. "It makes the subject more interesting. It motivates the student. Although it takes away from some of my free time, it's worth it." He finds that ITV programs are effective with all students. Using ITV, he is able to cross cultural and language barriers with his class. "The programs allow students to think in a different way," he says.

Science programs such as Science Alliance, Take A Look and Newton's Apple motivate the students to take their lessons beyond available classroom resources. For instance, after viewing the Take A Look program on insects, his students began to bring insects into class to study.

A Science Alliance program on electricity provided the heart of a lesson on the subject. Before the program, the students brainstormed a list of electrical conductors. After viewing the program, the class conducted experiments from ideas they had seen. Jesus says, "The programs bring abstract ideas into real life meaning. Even discipline-problem students focus directly on the program."

Jesus finds the KQED ITV Program Schedule essential for selecting grade-appropriate programs. The programs are useful in meeting his curriculum objectives. He finds that mathematics programs, such as It Figures, save teaching time by providing a visual demonstration of concepts, and Writer's Realm assists in teaching about sentence and paragraph structure. "Students oftentimes continue to watch ITV programs even if lunch or recess is about to begin," he says.

In the future, Jesus would like to expand his use of technology by integrating computers with ITV lessons. He also is encouraged that parents are becoming aware of his class's use of ITV "so they don't think their kids are just watching television."

"After viewing Read-It, my students wrote marvelous endings for the story. ITV programs really stimulate discussions and writing activities in my classroom better than any other thing I do."

— Richard Wayne, 4th-grade teacher
Burroughs Elementary School
Fresno, Fresno County

Burroughs Elementary School is the largest elementary school in the Fresno Unified School District. Fresno is an agricultural community with a population of about 300,000. Approximately 62,000 students attend the city schools. Of the 1,322 students at Burroughs, 54% are Hispanic, 21% are Asian, and 9% are black. Sixty-five percent of the students are from families who qualify for Aid to Families with Dependent Children (AFDC). Twenty percent of the 3rd-grade students have limited English-speaking ability.

Richard Wayne teaches a 4th-grade class of 31 students, seven of whom are children with special needs. Richard became interested in ITV after he was appointed the ITV representative for his school. He attended an in-service workshop and liked the programming he saw. As the ITV representative, Richard distributes the KQED/KMTF/KVIE Program Schedules and Vision newsletters to his staff. ITV guides have been purchased for the programs used at his school and are kept in the resource lab. Richard uses the Program Schedule to select the programs he uses and the teacher's guides for ideas on classroom usage. Programs are chosen according to what his class is studying. He does not view entire series; he only chooses individual programs from a series that correlates with units he is developing.

His amount of usage varies greatly. Some weeks he may use one program; another week he may use four. He does not have the time nor the facilities to tape programs, so he uses the programs "live". In the past, he has been disappointed with the quality of the broadcast signal. This week he received the County Instructional Media Services Catalog listing programs available on tape. He feels the catalogue offerings will increase his usage.

Richard believes that the value of ITV will be spread through word of mouth, teacher to teacher. There is some usage by other teachers in his school, but it is not, he feels, used to its fullest potential yet. He feels there are three main reasons for this:

1. The quality of the ITV picture has not been reliable.

2. Lack of equipment at the school site.

3. ITV is seen as "watching TV" by his colleagues.

Fortunately, the quality of the KMTF signal has recently been improved, and his school has just purchased 13 large 25-inch TV sets, which are being readied for use.

When asked to give specific examples of how ITV has helped his students learn, Richard quickly related three incidents:

> In October, his class was studying latitude. Even though the Geography Skills series is addressed to junior high students, he decided to use it because his class had already been introduced to the subject. He said it was "a wonderful lesson"; the students learned more about the subject, and what they did know was reinforced.
>
> Richard was preparing his class to do an essay. He used the third program in the Writer's Realm called "The Search Begins," which shows methods of collecting information and the use of web diagrams in the prewriting stage. He had already presented the webbing concept. After the show, he remembers Maria, one of the students, saying, "Oh, now I understand webbing." Others in the class appeared to have an improved understanding after the reinforcement provided by the ITV show.
>
> In October Richard's class began a science unit on matter. He used the Science Alliance program on matter to introduce the unit. He collected samples of matter and put them in boxes. Then he put a large question mark on the boxes. He had his class view the program. After the program, students identified the types of matter in the boxes. A lively and informative discussion took place.

Richard feels the programs are especially valuable because they expose his students to many things they would not experience in any other way. He feels ITV is a valuable tool in all areas. He uses the reading motivation and the Draw Along series often. He also feels that he himself learns much from the programs. He has incorporated some of the techniques he has seen on ITV shows into his teaching when not utilizing ITV.

Jim Satterberg, media coordinator for the Fresno Unified schools, adds: "The ITV programming we had available to us prior to the purchase of rights by the State and prior to our becoming part of the KQED service was very limited. Now we have great programming available. Lorraine Taylor is our contact person, and we have developed an excellent working relationship. Materials, information, and consulting have always been available."

Jim lists the most popular ITV series in the district as:

All About You	Math Works	Teletales
Arts Express	Newton's Apple	3-2-1 Contact
Community of Living Things	Reading Rainbow	Voyage of the Mimi
G. E. D.	Sci-Fair	Well, Well, Well
Landscapeof Geometry	Search for Solutions	UpCloseé Natural
Letter People		

He feels that more K-3 programming is needed, especially in mathematics. He points to improvement in the broadcast signal and more complete collections in media centers as the main obstacles to greater ITV usage.

"[Students'] writing is better when they're motivated by the programs. They also learn content. Frequently, they'll say, 'Oh, we learned that on Science Alliance.' The TV shows visually show children things we can't do in the classroom. It's one more way to show kids how to approach a problem."

— Wendy Maynard, 4th/5th-grade teacher
Woodrow Wilson Elementary School
Daly City, San Mateo County

Daly City, one of the largest cities in San Mateo County with a population of 78,000, is located just south of San Francisco. Woodrow Wilson Elementary School has about 400 students in kindergarten through 6th-grade, with about 40% minority and limited English-speaking students, mostly from Hispanic or Filipino background. While parents are supportive of education, according to Wendy Maynard, there is not much parent involvement due to many two-career families and limited English-speaking ability among parents.

Twenty-seven of Wendy's 29 students are classified as ESL students. The school's 1985 needs assessment resulted in focus on two areas: written language and critical thinking. An AB 803 Cycle 3 grant was written by Wendy and two others, Maxine Riley, a 3rd-grade teacher, and Barbara Casey, a 5th-grade teacher. The purpose of the grant was to obtain computers to use as an interactive technology in conjunction with ITV use.

Previously the three had been active ITV users, typically selecting a few programs from ITV series. The school purchased blank cassettes and the three teachers recorded programs on their own home VCRs. Due to the terrain, TV reception is poorer in Daly City than it is in Millbrae, where Wendy lives. (The teachers at this school were unaware of the Video Copy Centers or tape duplication through their county office and were sent information on these services.) They favor the block scheduling of new shows, such as Take a Look.

The school has two color TV sets and VCRs. Before the AB 803 grant, the school had one or two computers in each K-6 classroom. The AB 803 grant was used to obtain more computers (now totaling 19) and release time for teachers. They used the KQED Program Schedule to select programs and received assistance from Libby Reeves, KQED's Utilization Specialist.

The school's use of ITV is increasing. Wendy, Maxine, and Barbara each use ITV once or twice a week. ITV programs and subject areas include:

Science	Science Alliance, Start Here, Eureka!, Bioscope
Art	Arts Alive, Draw Along, Arts Express
Language Arts	Bookbird, Storybound, Reading Rainbow, You Can Write Anything, Fins, Feathers, and Fur

Mathematics	It Figures, Math Works
Social Studies	America Past
Critical Thinking	ThinkAbout, Out and About

Writing instruction often begins with an ITV program from series such as You Can Write Anything, Fins, Feathers and Fur, or Thinkabout, which has shows on brainstorming and summarizing. As students watch the program, they get ideas for what to write about. They do a first draft long hand, then input it, revise it, and print it out during their appointment with the Apple computer and the Fredwriter word processing program, free from the San Mateo County Office. They also receive teachers' manuals from the county office. "It's amazing how motivated kids get when it's their turn at the computer," Wendy says.

Wendy feels the benefits of ITV can be found in both motivational and cognitive areas. In art., Arts Express has been used to give students concepts of line and shape before beginning art projects. Science Alliance has provided introduction or review, Bookbird has helped motivate students to read more books.

More equipment is needed to make ITV use more common. The school's two TV sets are often in use and scheduling among classrooms becomes necessary. One 6th-grade teacher has catalogued all videotapes and maintains the video library in his classroom. Since several programs are found on a single cassette, finding the starting point for each program often takes valuable minutes of a teacher's time. His students have helped by watching programs at recess and noting the VCR's counter numbers for the start points. The VCR cart can then be shuttled between classrooms more efficiently since teachers can cue up the tape more quickly.

Wendy feels there are not enough programs for the K-3 levels, that some of the programs listed as appropriate for K-3 (e.g., Letter People or some music shows) are too difficult for the younger grades. Several of the K-3 teachers in the school are interested in using ITV but find there are not enough programs. (This year, KQED ITV is searching for more programs for the K-3 primary grades to include in 1988-89). Wendy also feels that more programming is needed with a California emphasis, showing California history, culture, and events. KTEH in San Jose ran a series on California that she found very useful.

"[Voyage of the Mimi]'s awesome. It has students talking about the environment, how soil influences plant life, how plant life influences animal life and what happens if something changes. On top of all of that, the students love it. They like the nature and biology and enjoy navigating the computerized oceans."

— Donald Sisk, 5th-grade teacher
Olinda Elementary School
Richmond, Contra Costa County

Last spring, student explorers from the Olinda Elementary School in Richmond made local headlines by navigating the Atlantic to study whales. Surprisingly, increased budgets for field trips played no part in this classroom adventure. The 5th- and 6th-grade students from this suburb of San Francisco were joining Captain Granville and his grandson C. T. on The Voyage of the Mimi, the award-winning ITV series that dramatizes the work of young scientists and high school students studying humpback whales off the coast of Maine.

Olinda Elementary received a Cycle 3 AB 803 grant to use science as a means of improving students' problem-solving and reading comprehension skills. With the $8,000 grant, the school purchased a large-screen TV and cart, a VCR, 4 Apple IIe computers, and the complete package of Voyage of the Mimi materials published by Holt Rinehart and Winston. The package included 13 videotapes, 4 software modules, and teacher and student guides.

The 52 students worked in teams with teachers Sally Goble and Donald Sisk in studying the variety of scientific and mathematical topics that arise during the course of the expedition and in the related documentaries. These topics include whale behavior, marine biology, mapping, navigation, food chains, weather patterns, and ecosystems. Both teachers use the series with their entire classes once or twice a week, with students spending about two hours per week on Mimi activities, including small-group use of the computer software. Peer tutoring allows more proficient students to help less proficient ones during the computer sessions.

Objectives for the project included raising students' CAP scores for both problem-solving and reading comprehension and promoting more positive attitudes towards reading. Sally feels the test scores will reflect improvement in problem-solving and logical thinking, as well as geometry and vocabulary. She has noticed a big improvement in students' graphing abilities.

Both teachers report that students enjoy using the Mimi programs and often ask to use the computer for the follow-up activities. They agree that the video and software materials provide valuable additions to their science and math texts by covering important material not covered in the texts. Both report being "surprised and amazed at how good the kids can be and how much they get out of the programs." Donald has received extra-credit science reports on whales, done at the students' own initiation and both classes have done art projects related to the series. The peer tutoring has also provided social benefits: shy students are working more

with others and non-English-speaking students enjoy and master the computer software.

The project has been publicized in the following article in the local newspaper, the West County Times, as well as the Superintendent's newsletter. Other schools who have heard of the Olinda School's work have been inspired to apply for AB 803 grants. Sally has also used the series in her summer school science program.

Donald and Sally said that, while The Voyage of the Mimi is a bit overwhelming in terms of teacher preparation time, it has many benefits for their students. "What it offers the kids as a result of our time is tremendous!" says Sally. "The information is presented in a realistic format and in an appealing manner that encourages the students and piques their curiosity."

El Sobrante students have whale of a time with project

Pupils investigate 'flukes' and fingerprints

By Christine Boyd
Staff writer

EL SOBRANTE — Some of the children in Donald Sisk's fifth-grade class didn't believe that a whale's tail markings are as unique to it as a person's fingerprints.

So Sisk offered them 50 points of extra credit to write a paragraph on why fingerprints and "flukes," as the whale's tails are called, are comparable.

The fluke study is part of an $8,000 science and social studies project called "The Voyage of the Mimi" that Sisk and sixth-grade teacher Sally Gable are trying at Olinda Elementary School to pique children's interest in science.

It uses videos, computer programs, workbooks and readings to teach children about navigation, weather, ecology and, of course, whales.

"The Voyage of the Mimi" was a television program that dramatized the trip of scientists and junior high and high school students from the Northwestern Atlantic to study humpback whales.

It has been put onto video and packaged with the books and computer programs into an all-encompassing science course.

"It's awesome," said Sisk of the program. It has students talking about the environment, how soil influences plant life, how plant life influences animal life and what happens if something changes, he said.

The program also has students reading maps and doing navigation, which means they have to use mathematics, as well as learn about directions and bearings, he said.

On top of all of that, the students love it, Sisk said. They like the nature and biology, and enjoy navigating the computerized screen, he said.

The district received $8,800 in a state grant to pay for the videos and the accompanying software and workbooks, and to buy four Apple computers, a VCR and a large-screen TV to show the films, said Dean Karahalios, the school's teacher-in-charge.

While Sisk's class was watching one of the Mimi videos, some of Gable's sixth-graders were working on the computers in the hallway. Jeff Naraja was looking for hidden treasure, while Jennifer Pasia was trying to figure out where her ship was using radio beams and another student was working on how to get to land before his boat was hit by a hurricane.

Karahalios said the school wanted the Mimi program because Principal Pauline Reno hoped to encourage children to read more. The school's results on the California Assessment Program test had shown that children were scoring lower than they should be in reading and problem-solving, he said.

Because Mimi involves reading about whales and their ecosystems, and doing math with computer programs, the principal thought it would boost the test scores, Karahalios said.

DEAN KARAHALIOS watches Jon Howell work on a radar program as part of "The Voyage of the Mimi" at Olinda Elementary School.

Staff photographer Debbie

MIDDLE SCHOOLS

"ITV helps students visualize literature irrespective of their decoding skills. The slower learner benefits from the step-by-step presentation of certain programs while advanced students benefit from a different kind of presentation which can focus on the nuances, context, and connotation of words."

— Joella Warner, 8th-grade teacher
Pine Valley Intermediate School
San Ramon, Contra Costa County

Pine Valley Intermediate School is located in a residential East Bay commmunity of 30,000 that is fast becoming the headquarters of some of the Bay Area's largest corporations. The school serves approximately 800 7th- and 8th-grade students from primarily middle to upper-middle class families. Minority percentages are low and include 7% Asian, 4% Hispanic, 2% black, and 3% Filipino.

Prior to the AB 803 Local Assistance grants, the school had 2 VCRs, which were used by a few teachers for KQED ITV science series. When the school became the recipient of an AB 803 grant during the first cycle, each major discipline area received a television and VCR as well as teachers' guides, pre-recorded videotapes and release time for utilization training. Staff development was provided by KQED and by two of the school's mentor teachers who gave half-day workshops demonstrating lesson plans integrating ITV in the reading and science curriculum.

Teachers at Pine Valley have used KQED ITV in the areas of science, literature, history, geometry, and study skills. Eighth- grade teacher Joella Warner uses Shakespeare on Stage, The Short Story, and Best of Cover to Cover to provide students with a common core of dramatized literature experiences.

Joella combines suggestions from the ITV teacher's guides with innovative teaching strategies that manipulate the characteristics of the medium. In some lessons, the sound is turned off for certain passages and students compose their own dialog or narration, predicting what they think will occur next. During some of these silent passages, students might undertake an analysis of characterization using visual cues only.

Joella has discovered that in addition to being a creative catalyst, ITV can also be a time-saver. "The best thing about ITV is that it doesn't get tired. Wisdom is dependent upon getting the facts and facts presented with repetition become tedious. ITV frees creative teachers from some of the tedium so that they can concentrate on mini-lectures, questioning, and eliciting responses."

As teachers experiment from year to year with ITV at Pine Valley Intermediate, their success and enthusiasm are being transmitted to others, according to Joella. "Parents request that students transfer into my class and I think this is because ITV gives me more time to concentrate on learning."

"ITV lends an expertise and realism to the class that I can't duplicate. I came from the field of construction where I used many tools in my work. Television is a tool for teaching. In being able to introduce material, television is a great medium."

— Durl Van Alstyne, 7th-9th grade teacher
Bidwell Junior High School
Chico, Butte County

Durl Van Alstyne works as an independent studies teacher at Bidwell Junior High in Chico, a rural college town of about 30,000 north of California's Gold Country. As a county teacher, he teaches 25 students from both Chico Junior High and Bidwell Junior High Schools. The 7th- through 9th-graders in Durl's classes come from a variety of backgrounds; nearly half are Hispanic. His independent studies class is an attempt by the county to meet the demands of students with specific learning needs. It is common for Durl's students to have curriculum skills ranging from the 2nd grade to high school levels, so he teaches them in groups of 10 or less.

Durl successfully applies educational technology, both computers and ITV, to a wide range of student needs. He is no stranger to using ITV programs in the classroom. He became familiar with ITV during his student teaching days during the early 1970's. It has been in the last three years, though, that Durl has used ITV daily in his classroom.

In the beginning of his teaching, Durl had to overcome the obstacles of keeping equipment for more than the one-day loan period. He was able to convince the county that a computer and a monitor/VCR were vital to his teaching. The equipment he now has is in operation 60% of the day.

Durl places up to three students at a time in a viewing carrel. "An aide or myself also watch the program and follow up with a discussion," Durl explains. "We are able to discuss factual elements with the younger children. The older kids are asked about relationships between things."

Durl keeps informed about ITV programs through KQED's Vision newsletter and the KQED ITV Program Schedule. He borrows programs from the Butte County Instructional Media Center and also tapes programs at home. He relies primarily on science programs such as Newton's Apple, Atoms and Molecules, 3-2-1 Contact and the language arts series Watch Your Language and Wordsmith. "The science programs tie into the science curriculum," Durl feels. "They are short, interesting, and stimulate the logical thought process. My students get something out of it."

Using language arts series, Durl is able to integrate the teaching of computer skills with the ITV lesson. Durl explains about one 9th-grade student with low reading and high writing abilities: "He is able to get ideas from the ITV program, takes his ideas to the computer, write a story, and use a spelling check program. He would never be able to read a story

and do the same thing."

Even with a diverse student population, Durl is finding more uses for ITV. "I have more students and I have more applications for it," he says. "As I become more familiar with what programs are available, I use ITV more. I can't be with all students at all times. ITV makes things more lively, more than I may be able to do."

"The potential of video for asking kids to think and give reasons why is tremendous. My sense is if we frequently stop an episode and ask kids to predict events and confirm what they know, their critical thinking ability will increase."

— Steve Hirabayashi, principal
Ben Franklin Middle School
San Francisco

This is a story of a school embarking on an innovative use of instructional television incorporating high-quality video materials, teacher training, and theoretical insights from educational research. Last summer, Bobby Sipes, a 6th-grade teacher, Sam Ochanang, the science resource person, and Steve Hirabayashi, the principal, attended a Math-Science Summer Institute sponsored with AB 803 funds at the Lawrence Hall of Science at Berkeley. There, they heard presentations by Bill Marsh, a mathematician and educator from the university's School of Education, and Sam Gibbon, executive director of The Voyage of the Mimi project.

With an AB 803 grant, teachers at Ben Franklin purchased the Mimi materials, including videocassettes, software, and teacher and student guides. Thus far, Steve says, "We have been using it in the traditional form, showing an episode and following up with questions and activities from the teacher's guide. It's a good show and has a lot of impact. But I've perceived we're not using the video capabilities as much as we can."

With Bill Marsh's help, a research project is being organized to investigate how teachers and students can adopt a more active style of ITV use, which Bill calls "actively viewed video." His work builds on previous research by, among others, Dr. James Gibbons, professor of engineering at Stanford, and Dr. Anne Marie Palinscar of the University of Illinois.

Gibbons' research dates back to his studies in the 1970s of the use of taped lectures with engineering students. Using a technique called "tutored videotape instruction," engineering students at a Hewlett-Packard facility in Santa Rosa viewed the same lectures on tape that Stanford students saw on campus. The H-P students, however, were free to interrupt the lecture at any time and discuss their questions with a tutor. Gibbons believes students learn best through this method, which combines the positive features of lectures with those of small-group discussion. The H-P students, while having initially lower GPAs and admission test scores, outperformed the Stanford students in GPA for the tutored courses.

Palinscar's research has attracted attention for its focus on the metacognitive activities involved in reading. Palinscar points out that most students learn to decode phonetic relationships between printed symbols and their correct pronunciation. What most students lack is understanding of what they read, or "reading for meaning" skills. By having students focus on the metacognitive skills of thinking about their own thinking as they read, her research has demonstrated gains in reading scores and critical thinking abilities. She has students focus on skills such as summarizing, confirming, and predicting.

Bill has done previous research on "actively viewed video" with workers at the East Bay Conservation Corps. These students work at jobs for the Corps during the day and attend classes at night. Bill has used programs like a NOVA show on irrigation crises in Africa and California, and David Attenborough's Life on Earth. Like Gibbons, he feels the method works best with small groups of students of six or less.

He also believes that "desktop video" has the potential to do for video-based teaching what desktop publishing has done for in-house publications. The current generation of VHS camcorders and editing equipment now allows teachers to make videos to suit their individual pedagogical needs. These videos would not compete with expensively produced productions, but can serve as the video analogue to the student hand-out or diagrams and sketches on the blackboard.

Bill would like to make a video of the making of a solar house to accompany The Voyage of the Mimi's segments on solar architecture. His video would have its own related curriculum objectives: to show not only the science and technology of such a house, but also how planning for the building of a solar house can be done, using task analysis and critical path analysis methods used in management.

During the coming year, Bill, Steve, and the teachers at Ben Franklin will be testing out these hypotheses. Students will work on these activities using video materials including Voyage of the Mimi for one hour each day for six weeks. Bill would like to demonstrate gains of the sort Paliscar found with the reading of print materials in students' viewing of video. He further believes that the critical thinking abilities gained in thinking about video can transfer to students' reading abilities. This is a revolutionary claim: that TV-viewing and reflection can actually support more skilled reading. Confirming these hypotheses would provide a counter-argument to educators and parents who believe that TV-viewing is necessarily a passive activity. Bill hopes to prove that it all depends on the type of TV content and how teachers and students can collaborate in learning from video.

"We have fertile ground for what could be a wonderful place for using television for instruction. Every year we move a little closer and teachers see more and more value in instructional television."

— Richard Wood, principal
Branciforte Junior High School
Santa Cruz

Dick Wood is the principal of Branciforte Junior High, part of the Santa Cruz City School District and one of two junior high schools in the city of Santa Cruz. Branciforte has approximately 540 7th- and 8th-grade students, mostly middle-class whites, with a growing minority population, mostly Hispanics.

The school used ITV on a very limited basis until they received an AB 803 grant three years ago. Prior to the grant, Dick remembers, they had "a couple of TVs on carts, a few VCRs—it was usually too much of a hassle for teachers to use [ITV] too much." With the AB 803 money, Branciforte installed a TV in each of the 22 classrooms and library, wired to a central "mini-studio" broadcast system in the library.

With this new system in place, ITV use has increased. The librarian tapes programs and broadcasts them to individual classrooms at a teacher's request. In addition, she lets teachers know about upcoming programs they may be interested in and keeps track of program rights. The teachers also borrow tapes from the Santa Cruz County Media Center, use some PBS evening programming, and are considering purchasing videos for school use.

Branciforte also has one camcorder and several VCRs and has produced some student videos in the classroom. One teacher is interested in starting a video club, helping students produce their own videos. They're currently looking for funding sources to purchase some editing equipment. The school is also considering offering an elective class next year on video production.

Teachers are currently using ITV programs primarily in science, social studies, literature, and mathematics. Dick feels that most teachers haven't really tapped more creative uses of ITV, primarily because of lack of time for planning. Until this interview, he was not aware of the staff development services offered by KQED and his staff has had no formal training in the use of video in the classroom.

Dick described several possible future projects for the use of video at Branciforte. He hopes to see the use of the in-school broadcast system more formalized, with an expanded collection of tapes and easy access for teachers. "The main problem is staffing, we need someone who really spearheads the whole operation, and has the knowledge and interest to expand video use."

Another project they applied for, through district mini-grant funds,

involved taping teachers in a series of lessons covering some of the more difficult skills and concepts in math and science. The tapes would then be available for students and parents to check out for home use. Unfortunately, the project was not funded and has been put on hold.

Dick plans to continue encouraging the use of television and video for instruction, and to continue seeking funding to enable Branciforte to implement these additional projects. He feels the use of ITV will continue to increase as teachers see more of the possibilities offered by video. "Television in the schools can be used or abused. It's part of my responsibility to see it made available as another tool to help kids better understand their world. If used properly, it can be wonderful."

HIGH SCHOOLS

"Many students lack the formal reasoning skills necessary to understand complex concepts. ITV bridges the gap and makes the abstract tangible for students."

— Carolyn Henderson, biology and chemistry teacher
Hogan Senior High School
Vallejo, Solano County

Hogan Senior High School (10th- through 12th-grades) is located in a suburban, middle-class community. The school has an enrollment of approximately 1,500 students, mostly minority students. Several teachers began using ITV last year, following an in-service presentation by KQED staff. All of the departments share the school's six VCRs and monitors, available on a sign-out basis. Carolyn Henderson feels ITV use is increasing at Hogan because the VCRs are in use more this year than last. The three departments most consistently using ITV are English, Social Studies, and Science.

Hogan High School has access to videotapes from the Vallejo Unified School District Media Center and does not contract for county media services. Carolyn most often obtains tapes from the media center, although she is doing some taping on her home VCR. The school is not cabled, so teachers do not have the option of recording programs at the school site.

The media center will record programs at the request of the teachers, as well as having several series in their tape library. It takes three days from the date of request to have a tape delivered to the school site. (Teachers may obtain them sooner if they pick them up at the media center.) Although the district provides efficient access to tapes, Carolyn prefers to record her own tapes at home "as a luxury" to herself so that the tapes are readily available in her classroom. Therefore, she finds KQED's block feed schedule to be very beneficial to her recording.

Carolyn selects programs from the KQED ITV Program Schedule, but they only received one Schedule per department through the county office. She usually previews the programs to make selections. She has used all or part of the following series:

Chemical Equilibrium
Atoms & Molecules
Energy Flow
Homeostasis
Genetics
Organic Evolution
Structure of the Atom
Bioscope
Dimensions in Science:Chemistry
Physical Science & You
Eureka
Electron Arrangement & Bonding
Interactions
The Mole Concept

Carolyn especially likes the TV Ontario "Concepts in Science" series of 10-minute programs. She feels the computer graphics are wonderful for helping students understand abstract concepts. The language of the pro-

grams is current, and the jokes add to the enjoyment of the series. She is the only teacher at Hogan who has ordered accompanying teacher's manuals, although she noted a real inconsistency in the quality and depth of various manuals. She would prefer that manuals include some teacher and student activities as well as program descriptions. She occasionally reads the program synopsis in lieu of previewing the program.

Carolyn most often uses ITV for review at the end of a unit, as "one last shot" for presentation of content. She finds many of the high school level programs are too complex to use as introductory material. She usually first presents a concept to the class through a lecture, then assigns some individual work, either homework or a lab assignment and finally has the class view and discuss the ITV program. She feels the programs are most effective for students who are doing well to begin with. "If the students are lost before the program, they will still be lost after the program. The biggest value of ITV is that students compare their own mental model against the program, then confirm or reject their own model based on what they see." ITV also holds students' attention and helps her recognize students' levels of understanding of a concept.

Carolyn also feels ITV has saved time in the classroom. There have been some science demonstrations she has chosen not to set up in the classroom because they were shown clearly in ITV segments.

The biggest obstacles to greater use of ITV are limited access to the equipment and lack of access to an entire series early enough to preview the programs. Carolyn suggested that a subject sample tape, featuring clips of available programs, would be most helpful in motivating teachers and expanding the use of ITV. She suggested tapes be made available to each department chair to show at a department meeting or to send home with teachers for viewing. Most teachers at Hogan have VCRs, and find it easier to preview programs at home. Carolyn would also like to see more block-feeding of series early in the school year.

"My students have shown me the value of ITV in opening students up to alternative ways of thinking."

— Nicholas Fesunoff, social studies teacher
Woodrow Wilson High School
San Francisco

Nick Fesunoff joined Woodrow Wilson High School in San Francisco as a social studies teacher six months after the school opened in 1963. He has been teaching in the city now for 25 years and is past president of the San Francisco Council for the Social Studies. He teaches classes in World Civilization, Government, and Study Skills to students in grades 9 through 12.

The San Francisco Unified School District has been deeply affected by financial problems jeopardizing delivery of educational services district-wide. These problems include dealing with asbestos in school buildings, students who speak 27 different languages, and layoffs at the Parkside Center, the staff development and curriculum unit. The district media service began taping ITV programs off-air two years ago and has been slowly building an ITV video library. But other problems, such as lack of cable hookups, personnel to operate machines, or money to buy blank tapes, has slowed original ambitions. The media service has not been able to print a catalog in 10 years, so many teachers are unaware of the availability of ITV programs on tape.

In the summer of 1986, Nick went to Santa Barbara to attend the Social Studies Technology Summer Institute. There, he learned about KQED's ITV service and the social studies programming available. Nick and other teachers in his school use their own home VCRs to tape ITV and other KQED programming, preview it at home, and bring it into the classroom. He uses the video materials without referring to the teacher's guides because he would have to pay for the guides himself. There is no easy provision in his school for purchasing even these low-cost materials.

Due to lack of funds, videocassettes are sometimes recycled to record other programs rather than retained for future use. Just a few years ago, Woodrow Wilson High School had only a few broken-down monitors and VCRs. Now the school is equipped with four VCRs and televisions, using Consent Decree funds to purchase the equipment. The school has also been a recipient of an AB 803 grant.

Nick uses a variety of ITV series including Geography Skills, North America: Growth of a Continent, California Dreams, ThinkAbout, By the People, Equal Justice Under the Law, and Newscast From the Past, which his school purchased directly from the distributor, not knowing that the series was available to them as part of the KQED ITV service.

Nick reports that he uses ITV to reinforce teaching concepts and to help students visualize concepts that are difficult for them, like longitude and latitude. This is especially useful in his bilingual class, which

includes 38 students who speak Cantonese, Mandarin, Spanish, and Tagalog and who have only a functional level of English. He makes liberal use of the VCR's pause button, engaging his class in critical thinking and analysis throughout the video lesson. Other social studies teachers at his school make use of KQED evening programming under fair use guidelines, but Nick finds the 15-minute program format of ITV ideal for his classroom use.

Nick believes that using ITV in the social studies curriculum is an excellent way to help students focus on content and issues and to spark lively discussion of ideas and concepts, especially important for encouraging participation from non-English speakers.